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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/621,745	07/21/2000	KARL AMUNDSON	INK-086-(2108/66)	4716

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EXAMINER

NGUYEN, JIMMY H

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 06/17/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/621,745

Applicant(s)

AMUNDSON ET AL.

Examiner

Jimmy H. Nguyen

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-12,15,16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-12,15,16 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Request for Continued Examination***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/28/2003 has been entered. Claims 1, 3-12, 15, 16 and 18 are currently pending in the application. An action on the RCE follows:

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature, "an addressing event having a duration that is insufficient to fully evolve the optical state of the display medium" of claim 1, lines 11-12, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 2673

4. Claims 1, 3-12, 15 and 16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding to these claims above, the disclosure, when filed, does not contain sufficient information regarding to the claimed feature, "an addressing event having a duration that is insufficient to fully evolve the optical state of the display medium", of independent claim 1, lines 11-12, so as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The disclosure, page 23, line 28 through page 4, line 9, teaches the duration of the electrical pulse being insufficient in length to fully address the pixel directly. It is clear that the claimed duration of an addressing event is completely different from the duration of the electrical pulse.

5. It is noted that the following rejections are as based as best understood by the examiner due to the rejection under 35 USC 112, first paragraph.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3-12, 15, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hopper et al. (the C1 reference cited in IDS filed on 02/05/2001), hereinafter Hopper, and further in view of Oversluizen et al (USPN: 6,100,951), hereinafter Oversluizen.

Art Unit: 2673

As per claims 1 and 18, Hopper discloses an electrophoretic display (see Title) comprising a display medium (a contrasting medium, page 1148, second column, line 6, fig. 6) comprising at least one capsule (a cell, fig. 6, page 1149, first column, line 5, second column, last paragraph, lines 6-8) containing a plurality of electrophoretic particles dispersed in a fluid medium (page 1148, second column, lines 5-7), a transistor (a TFT, fig. 5) including a data line (a source electrode, fig. 5), a gate electrode (a gate electrode, fig. 5) and a pixel electrode (fig. 5), and a storage capacitor (Cs) (fig. 5). Hopper further teaches that the particles move during evolution of an optical state of the display medium (fig. 3 and Addressing section on page 1151). Accordingly, Hopper discloses everything except for a layer of insulating material and the first and second layers of the transistor and a layer of insulating material, the first and second layers of conductive material of the storage capacitor. However, Oversluizen discloses a related electrophoretic display (col. 1, lines 21-23 and col. 5, lines 31-33) comprising a transistor (a TFT, see fig. 21, col. 8, lines 36-39) including a layer of insulating material (a layer of insulating material 62, col. 9, line 30) situated between a first layer of conductive material (17,57) and a second layer of conductive material (16, 18, 18a, 56, 58, 66) (see col. 8, lines 32-36); and a storage capacitor (Cs) (see fig. 21, col. 9, lines 30-33) including a layer of insulating material (a layer of insulating material 62, see col. 9, line 30) situated between a first layer of conductive material (17,57) and a second layer of conductive material (16, 18, 18a, 56, 58, 66) (see col. 8, lines 32-36). Oversluizen further teaches that with the structures of the transistor and the storage capacitor as discussed above, the display device can be manufactured in a simple and inexpensive manner and have advantageous characteristics (abstract and col. 2, lines 2-5). It would have been obvious to a person of ordinary skill in the art at the time of the invention was

Art Unit: 2673

made to provide the specific structures of the transistor and the storage capacitor, as discussed above and as taught by Oversluizen, in the device of Hopper because this would provide a user an inexpensive display device with a better quality, as taught by Oversluizen (abstract and col. 2, lines 2-5).

Regarding to claims 3 and 12, Oversluizen further discloses that the layer of insulating material of the transistor and the layer of insulating material of the storage capacitor are the same continuous layer of insulating material (62) (see fig. 21).

Regarding to claim 4, Oversluizen discloses the transistor and the storage capacitor each further comprising a layer of semiconducting material (42') (see fig. 21, col. 8, line 58).

Regarding to claim 5, due to the similarity of this claim to a combination of claims 3 and 4 above, this claim is therefore rejected for the same reason as set forth in claims 3 and 4.

Regarding to claim 6, Oversluizen further discloses that the layer of semiconducting material (42') is unpatterned (see fig. 21).

Regarding to claims 7 and 8, Oversluizen further discloses that the storage capacitor is in electrical communication with a neighbouring gate electrode (57) (i.e., the claimed second gate line of claim 7 or the claimed conductor of claim 8).

Regarding to claim 9, Oversluizen further discloses that the second layer (16, 18, 18a, 56, 58, 66) of conductive material of the storage capacitor forms a storage capacitor pixel electrode (18a) and the first layer (17, 57) of conductive material of the storage capacitor forms a storage capacitor gate electrode (57) (see fig. 21).

Regarding to claim 10, Oversluizen further discloses that the layer of insulating material of the storage capacitor is patterned (col. 3, lines 34-40).

Art Unit: 2673

Regarding to claim 11, Oversluizen further discloses that the layer (62) of insulating material of the storage capacitor is unpatterned (see fig. 21).

Regarding to claim 15, Hopper discloses expressly that the capacitance of the storage capacitor ( $C_s = 1.5 \text{ pF}$ ) is greater than the capacitance of a pixel ( $C_{EF} = 0.055 \text{ pF}$ ) (page 1151, second column).

Regarding to claim 16, Hopper further teaches that the capacitance of a pixel exists (fig. 5), and Oversluizen discloses that an inherent capacitance ( $C$ ) of the pixel and an inherent resistance ( $R$ ) of the pixel exist (col. 10, lines 1-11). Accordingly, one skilled in the art at the time of the invention was made would recognize that, in the presence of the storage capacitor ( $C_s$ ), the voltage decay time across the pixel is based on the product of  $R$  and  $(C + C_s)$  (since  $C$  and  $C_s$  are parallel in connection).

### ***Response to Arguments***

8. Applicant's arguments with respect to independent claims 1 and 18 have been considered but are moot in view of the new ground(s) of rejection. Please see the new ground(s) of rejection above.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is (703) 306-5422. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at (703) 305-4938.

**Any response to this action should be mailed to:**

Art Unit: 2673

Commissioner of Patents and Trademarks

Washington, D.C. 20231

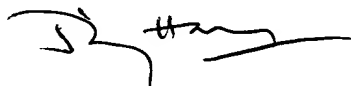
**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the Technology Center 2600 Customer Service Office whose telephone  
number is (703) 306-0377.

JHN  
June 15, 2003



Jimmy H. Nguyen  
Examiner  
Art Unit: 2673